

# Texas Water Development Board



**W** *Conditions* **A** **T** **T** **E** **R**

## RESERVOIR STORAGE

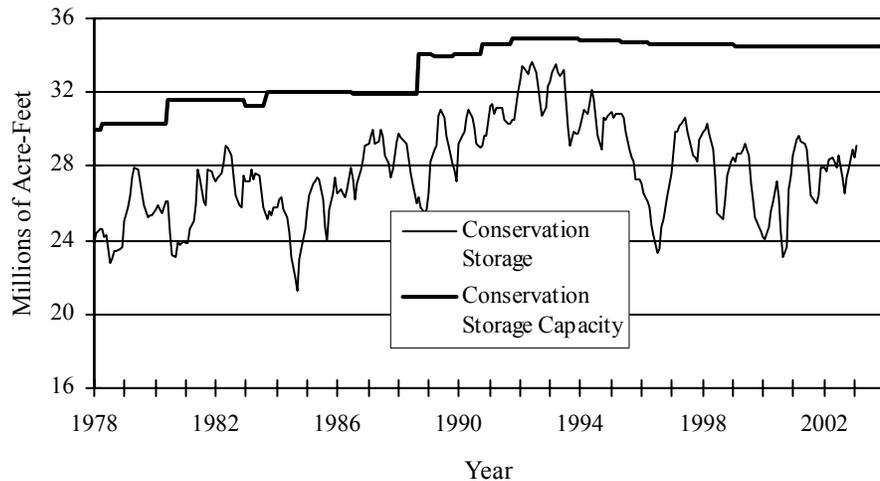
*February 2003*

Near the end of February, the 77 reservoirs monitored for this report held 29.12 million acre-feet in conservation storage, or 84.5 percent of the conservation storage capacity of the State's major reservoirs. Statewide total storage is near median for this time of year. Storage increased for the month, up 0.63 million acre-feet (+1.8%). Compared to last year at this time, storage is up 1.40 million acre-feet (+4.0%).

Storage in the East, South Central and Upper Coast Regions are at 100%. The North Central (90%) Region remains high, while the High Plains (32%), Low Rolling Plains (49%), Edwards Plateau (52%) and Southern (53%) Regions all remained low. The Trans-Pecos Region, represented by Red Bluff Reservoir, remained very low at 19% of capacity.

Most of the gains seen for the State this month were from the 539,000 acre-feet additional water held in Toledo Bend reservoir.

### CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS



Current data are based on elevation near end of month at 77 reservoirs that represent 98 percent of total conservation storage capacity in Texas reservoirs having a capacity of 5,000 acre-feet or more.

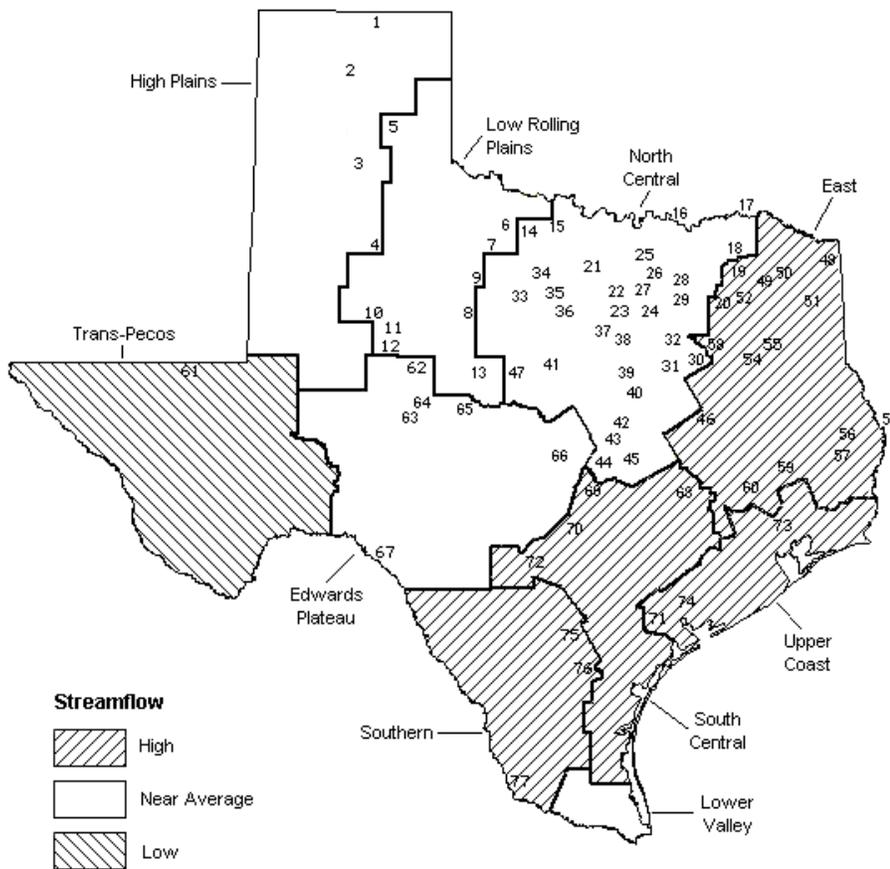
# STREAMFLOW

Of 29 reporting index stations in February, computed 30-day mean flows were very high (0% - 5% exceedance) at 2 stations, high (5% - 30% exceedance) at 14 stations, near normal (30% - 70% exceedance) at 10 stations, and low (70% - 95% exceedance) at 3 stations. Compared to January, flows increased at 18 index stations and decreased at 11.

On a regional basis, flows in February were high in the East Texas, South Central, Upper Coast and Southern Regions, low in the Trans-Pecos Region and normal everywhere else.

## FEBRUARY STREAMFLOW CONDITIONS

Reservoirs Shown on Map



- |                                  |                             |
|----------------------------------|-----------------------------|
| 1. Palo Duro Reservoir           | 40. Waco Lake               |
| 2. Lake Meredith                 | 41. Proctor Lake            |
| 3. MacKenzie Reservoir           | 42. Belton Lake             |
| 4. White River Lake              | 43. Stillhouse Hollow Lake  |
| 5. Greenbelt Reservoir           | 44. Lake Georgetown         |
| 6. Lake Kemp                     | 45. Granger Lake            |
| 7. Miller's Creek Reservoir      | 46. Lake Limestone          |
| 8. Fort Phantom Hill Reservoir   | 47. Lake Brownwood          |
| 9. Lake Stamford                 | 48. Wright Patman Lake      |
| 10. Lake J. B. Thomas            | 49. Lake Cypress Springs    |
| 11. Lake Colorado City           | 50. Lake Bob Sandlin        |
| 12. Champion Creek Reservoir     | 51. Lake O' the Pines       |
| 13. Hords Creek Lake             | 52. Lake Fork Reservoir     |
| 14. Lake Kickapoo                | 53. Toledo Bend Reservoir   |
| 15. Lake Arrowhead               | 54. Lake Palestine          |
| 16. Lake Texoma                  | 55. Lake Tyler              |
| 17. Pat Mayse Lake               | 56. Sam Rayburn Reservoir   |
| 18. Cooper Lake                  | 57. B. A. Steinhagen Lake   |
| 19. Lake Sulphur Springs         | 58. Cedar Creek Reservoir   |
| 20. Lake Tawakoni                | 59. Lake Livingston         |
| 21. Bridgeport Reservoir         | 60. Lake Conroe             |
| 22. Eagle Mountain Reservoir     | 61. Red Bluff Reservoir     |
| 23. Benbrook Lake                | 62. E. V. Spence Reservoir  |
| 24. Joe Pool Lake                | 63. Twin Buttes Reservoir   |
| 25. Ray Roberts Lake             | 64. O. C. Fisher Lake       |
| 26. Lewisville Lake              | 65. O. H. Ivie Reservoir    |
| 27. Grapevine Lake               | 66. Lake Buchanan           |
| 28. Lavon Lake                   | 67. Intl. Amistad Reservoir |
| 29. Lake Ray Hubbard             | 68. Somerville Lake         |
| 30. Richland-Chambers Creek Lake | 69. Lake Travis             |
| 31. Navarro Mills Lake           | 70. Canyon Lake             |
| 32. Bardwell Lake                | 71. Coletto Creek Reservoir |
| 33. Hubbard Creek Reservoir      | 72. Medina Lake             |
| 34. Lake Graham                  | 73. Lake Houston            |
| 35. Possum Kingdom Lake          | 74. Lake Texana             |
| 36. Lake Palo Pinto              | 75. Choke Canyon Reservoir  |
| 37. Lake Granbury                | 76. Lake Corpus Christi     |
| 38. Lake Pat Cleburne            | 77. Intl. Falcon Reservoir  |
| 39. Whitney Lake                 |                             |

**CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS**

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late February 2003 (acre-feet) (%)	Change since Late January 2003 (acre-feet) (%)	Change since Late February 2002 (acre-feet) (%)
<b>HIGH PLAINS</b>					
Palo Duro Reservoir	1	60,900	3,260 5	-110 0	-2,300 -4
Lake Meredith (Texas)	2	500,000	190,940 38	-2,780 -1	-57,660 -12
Lake Meredith (Texas and Oklahoma)	(2)	779,560	190,940 24	-2,780 0	-57,660 -7
MacKenzie Reservoir	3	46,250	7,800 17	-120 0	-550 -1
White River Lake	4	31,850	5,590 18	-220 -1	-1,670 -5
TOTAL		639,000	207,590 32	-3,230 -1	-62,180 -10
<b>LOW ROLLING PLAINS</b>					
Greenbelt Reservoir	5	58,200	23,610 41	80 0	-720 -1
Lake Kemp	6	319,600	239,950 75	0 0	106,050 33
Miller's Creek Reservoir	7	27,890	14,740 53	-240 -1	2,420 9
Fort Phantom Hill Reservoir	8	70,030	41,580 59	-730 -1	11,500 16
Lake Stamford	9	52,700	38,890 74	-560 -1	23,590 45
Lake J. B. Thomas	10	202,300	19,960 10	-510 0	750 0
Lake Colorado City	11	30,800	16,130 52	-270 -1	-2,520 -8
Champion Creek Reservoir	12	41,600	2,230 5	-30 0	110 0
Hords Creek Lake	13	8,600	2,380 28	-40 0	-620 -7
TOTAL		811,720	399,470 49	-2,300 0	140,560 17
<b>NORTH CENTRAL</b>					
Lake Kickapoo	14	106,000	78,060 74	-1,640 -2	8,480 8
Lake Arrowhead	15	262,100	152,030 58	-1,110 0	1,230 0
Lake Texoma	16	2,722,300	2,306,120 85	-58,560 -2	-81,880 -3
Pat Mayse Lake	17	124,500	123,930 100	3,400 3	30 0
Cooper Lake	18	273,000	273,000 100	0 0	0 0
Lake Sulphur Springs	19	17,710	17,710 100	1,490 8	950 5
Lake Tawakoni	20	936,200	922,000 98	40,200 4	31,800 3
Bridgeport Reservoir	21	374,830	279,100 74	1,400 0	-2,700 -1
Eagle Mountain Reservoir	22	178,380	145,000 81	3,600 2	1,600 1
Benbrook Lake	23	88,200	87,940 100	1,990 2	7,490 8
Joe Pool Lake	24	175,800	175,800 100	0 0	0 0
Ray Roberts Lake	25	798,760	798,760 100	0 0	33,860 4
Lewisville Lake	26	555,000	555,000 100	0 0	35,000 6
Grapevine Lake	27	187,700	186,030 99	13,260 7	41,130 22
Lavon Lake	28	443,800	443,800 100	20,280 5	4,900 1
Lake Ray Hubbard	29	413,420	413,420 100	320 0	2,020 0
Richland-Chambers Creek Lake	30	1,103,820	1,103,820 100	0 0	0 0
Navarro Mills Lake	31	55,810	55,810 100	0 0	0 0
Bardwell Lake	32	53,580	53,580 100	5,660 11	7,070 13
Hubbard Creek Reservoir	33	317,800	148,800 47	-800 0	33,000 10
Lake Graham	34	45,000	29,050 65	-190 0	-3,890 -9
Possum Kingdom Lake	35	551,820	472,400 86	-5,900 -1	22,800 4
Lake Palo Pinto	36	27,650	22,070 80	-240 -1	7,600 27
Lake Granbury	37	135,680	133,600 98	500 0	5,200 4
Lake Pat Cleburne	38	25,300	23,440 93	2,590 10	-1,860 -7
Whitney Lake	39	622,800	470,220 76	14,700 2	-17,680 -3
Waco Lake	40	144,500	144,500 100	2,540 2	0 0
Proctor Lake	41	55,590	55,590 100	50 0	20,600 37
Belton Lake	42	434,500	434,500 100	0 0	0 0
Stillhouse Hollow Lake	43	226,060	226,060 100	0 0	0 0
Lake Georgetown	44	37,010	37,010 100	0 0	0 0
Granger Lake	45	54,280	54,280 100	0 0	0 0
Lake Limestone	46	215,750	215,750 100	750 0	350 0
Lake Brownwood	47	143,400	132,540 92	900 1	25,540 18
TOTAL		11,908,050	10,770,720 90	45,190 0	182,640 2

**CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS**

Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late February 2003 (acre-feet) (%)	Change since Late January 2003 (acre-feet) (%)	Change since Late February 2002 (acre-feet) (%)
<b>EAST</b>					
Wright Patman Lake	48	142,700	142,700 100	0 0	0 0
Lake Cypress Springs	49	66,800	66,800 100	0 0	0 0
Lake Bob Sandlin	50	202,300	202,300 100	0 0	0 0
Lake O' the Pines	51	252,000	252,000 100	25,850 10	9,100 4
Lake Fork Reservoir	52	635,200	635,200 100	0 0	0 0
Toledo Bend Reservoir	53	4,472,900	4,472,900 100	539,900 12	358,900 8
Lake Palestine	54	411,300	411,300 100	0 0	0 0
Lake Tyler	55	73,700	73,700 100	0 0	0 0
Sam Rayburn Reservoir	56	2,876,300	2,876,300 100	0 0	0 0
B. A. Steinhagen Lake	57	94,200	89,580 95	4,670 5	36,260 38
Cedar Creek Reservoir	58	637,050	637,050 100	1,450 0	2,050 0
Lake Livingston	59	1,750,000	1,750,000 100	0 0	19,000 1
Lake Conroe	60	429,900	414,700 96	-1,100 0	-3,100 -1
TOTAL		12,044,350	12,024,530 100	570,770 5	422,210 4
<b>TRANS-PECOS</b>					
Red Bluff Reservoir	61	307,000	59,750 19	1,610 1	18,950 6
TOTAL		307,000	59,750 19	1,610 1	18,950 6
<b>EDWARDS PLATEAU</b>					
E. V. Spence Reservoir	62	488,760	39,800 8	-1,100 0	-16,750 -3
Twin Buttes Reservoir	63	177,800	5,900 3	560 0	-2,590 -1
O.C. Fisher Lake	64	119,200	3,290 3	-20 0	-990 -1
O. H. Ivie Reservoir	65	554,340	208,100 38	-1,800 0	-42,600 -8
Lake Buchanan	66	896,980	886,080 99	2,210 0	109,180 12
Amistad Reservoir (Texas)	67	1,771,030	947,000 53	20,000 1	95,000 5
Amistad Reservoir (Texas and Mexico)	(67)	3,151,300	1,092,000 35	26,000 1	102,000 3
TOTAL		4,008,110	2,090,170 52	19,850 0	141,250 4
<b>SOUTH CENTRAL</b>					
Somerville Lake	68	155,060	155,060 100	0 0	0 0
Lake Travis	69	1,144,100	1,144,100 100	0 0	0 0
Canyon Lake	70	385,600	385,600 100	0 0	5,900 2
Coleta Creek Reservoir	71	35,060	31,660 90	-320 -1	300 1
Medina Lake	72	254,000	254,000 100	0 0	2,200 1
TOTAL		1,973,820	1,970,420 100	-320 0	8,400 0
<b>UPPER COAST</b>					
Lake Houston	73	128,860	128,860 100	0 0	0 0
Lake Texana	74	157,900	157,380 100	-520 0	10,580 7
TOTAL		286,760	286,240 100	-520 0	10,580 4

## CONSERVATION STORAGE DATA FOR SELECTED MAJOR TEXAS RESERVOIRS

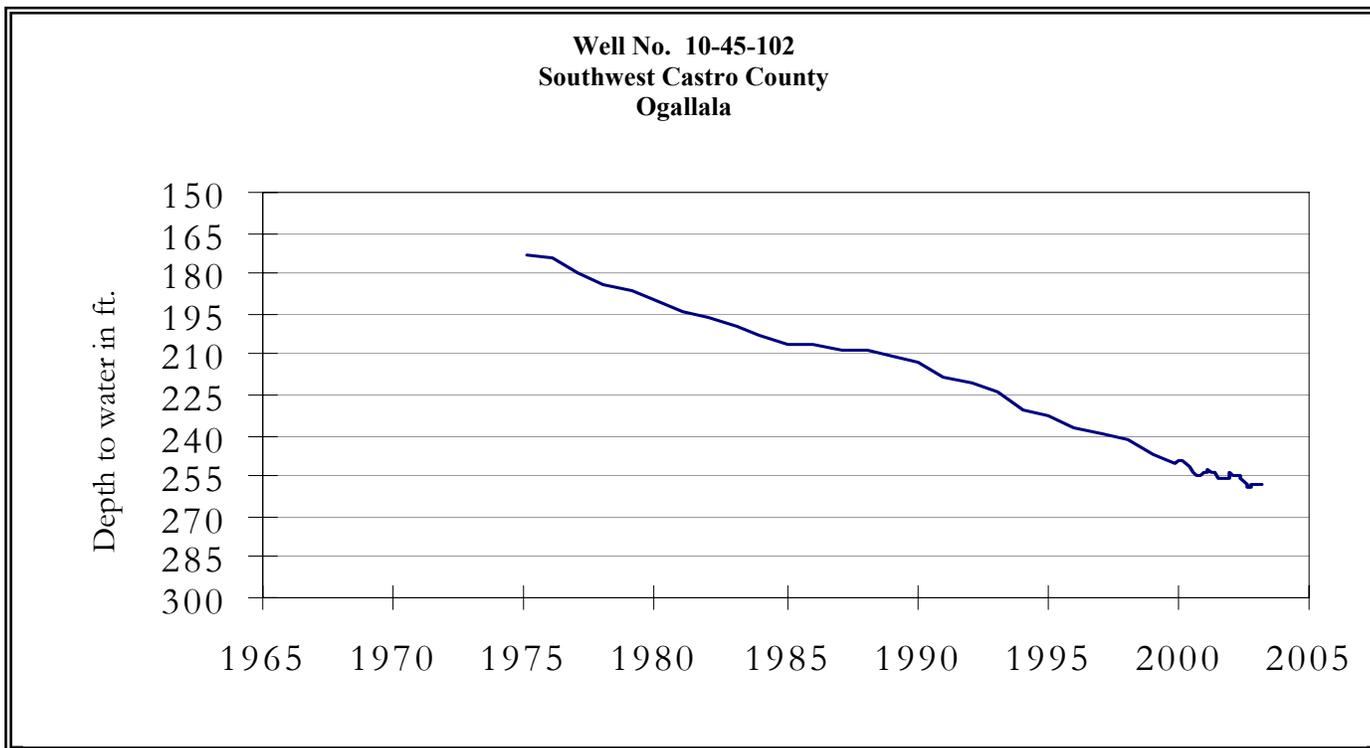
Name of Lake or Reservoir	No. on Map	Conservation Storage Capacity (acre-feet)	Conservation Storage Late February 2003 (acre-feet) (%)	Change since Late January 2003 (acre-feet) (%)	Change since Late February 2002 (acre-feet) (%)
<b>SOUTHERN</b>					
Choke Canyon Reservoir	75	695,260	693,000 100	-2,260 0	420,000 60
Lake Corpus Christi	76	241,240	241,240 100	0 0	6,540 3
Falcon Reservoir (Texas)	77	1,555,120	378,000 24	-1,000 0	102,000 7
Falcon Reservoir (Texas and Mexico)	(77)	2,653,290	727,000 27	12,000 0	346,000 13
TOTAL		2,491,620	1,312,240 53	-3,260 0	528,540 21
 <b>STATE TOTAL</b>		 34,470,430	 29,121,130 84	 627,790 2	 1,390,950 4

**Note:**

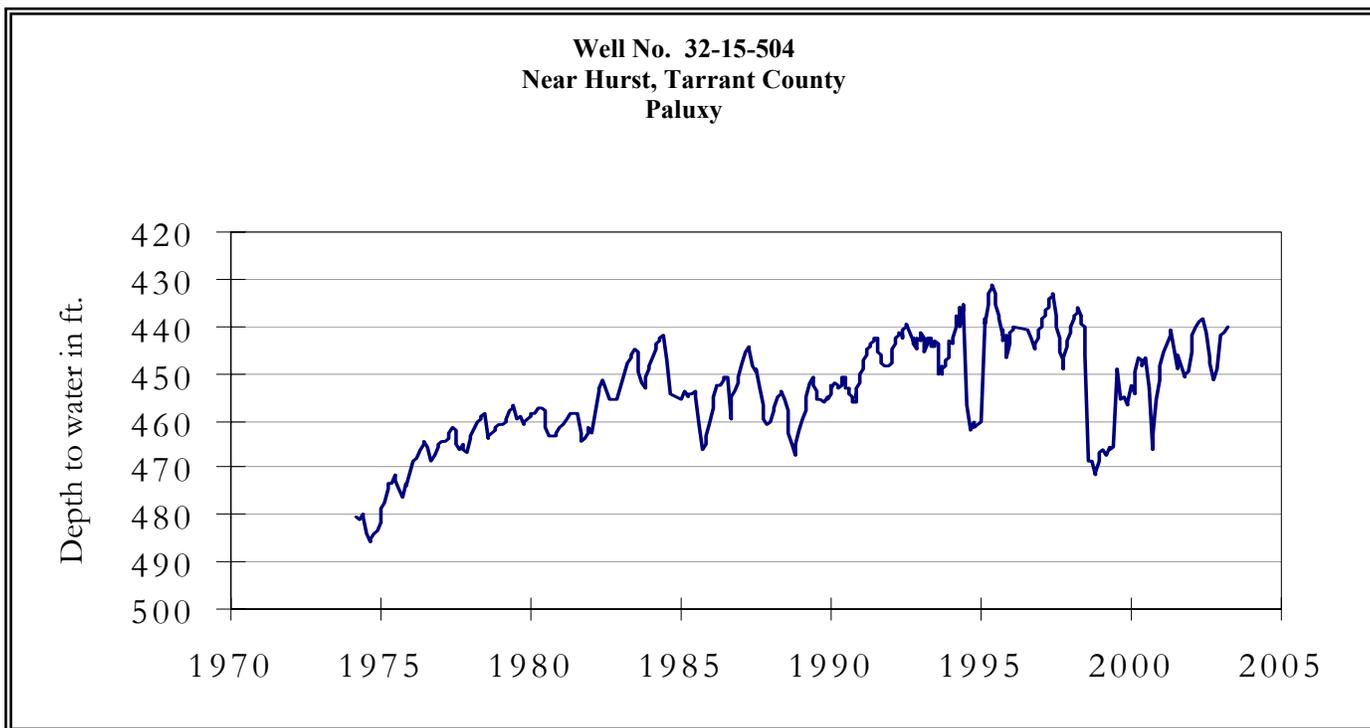
Conservation storage capacity is the space available to store water above the level of invert of lowest outlet works and below the level of top of conservation pool or normal maximum operating level. Conservation storage refers to the volume of water held within the conservation storage space. Not included is any water in flood control storage (above the top of conservation pool or normal maximum operating level), or any water in so called dead storage (in the bottom of the reservoir, below the invert of lowest outlet works and consequently not removable by gravity flow alone.) Percentage of conservation storage is based on the conservation storage capacity of the reservoir and the conservation storage in the reservoir for date shown. Percent change is given by % Change = 100 \* (current conservation storage - past conservation storage)/conservation storage capacity.

Current data are based on elevations near end of month at 77 reservoirs that together represent 98 percent of the total conservation storage capacity of major Texas reservoirs (those with capacity of 5,000 acre-feet or more each). Figures in parentheses for Lake Meredith represent the total conservation storage excluding 58,014 acre-feet of dead storage and are not included in State total. Preliminary figures are shown for the United States' share of conservation storage in International Amistad and International Falcon Reservoirs; the estimates may be subject to revision on completion of international water accounting. Texas (United States' share) and Mexico and are not included in State total.

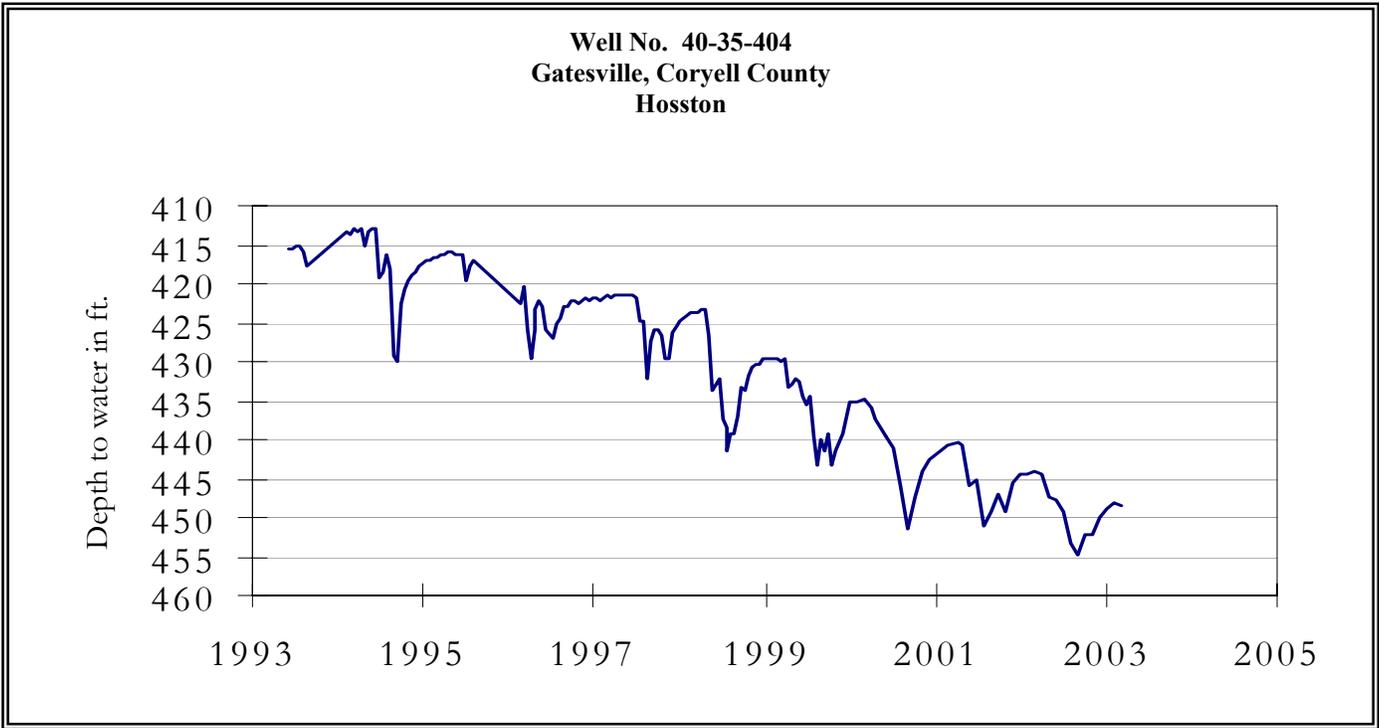
## FEBRUARY GROUND WATER LEVELS IN OBSERVATION WELLS



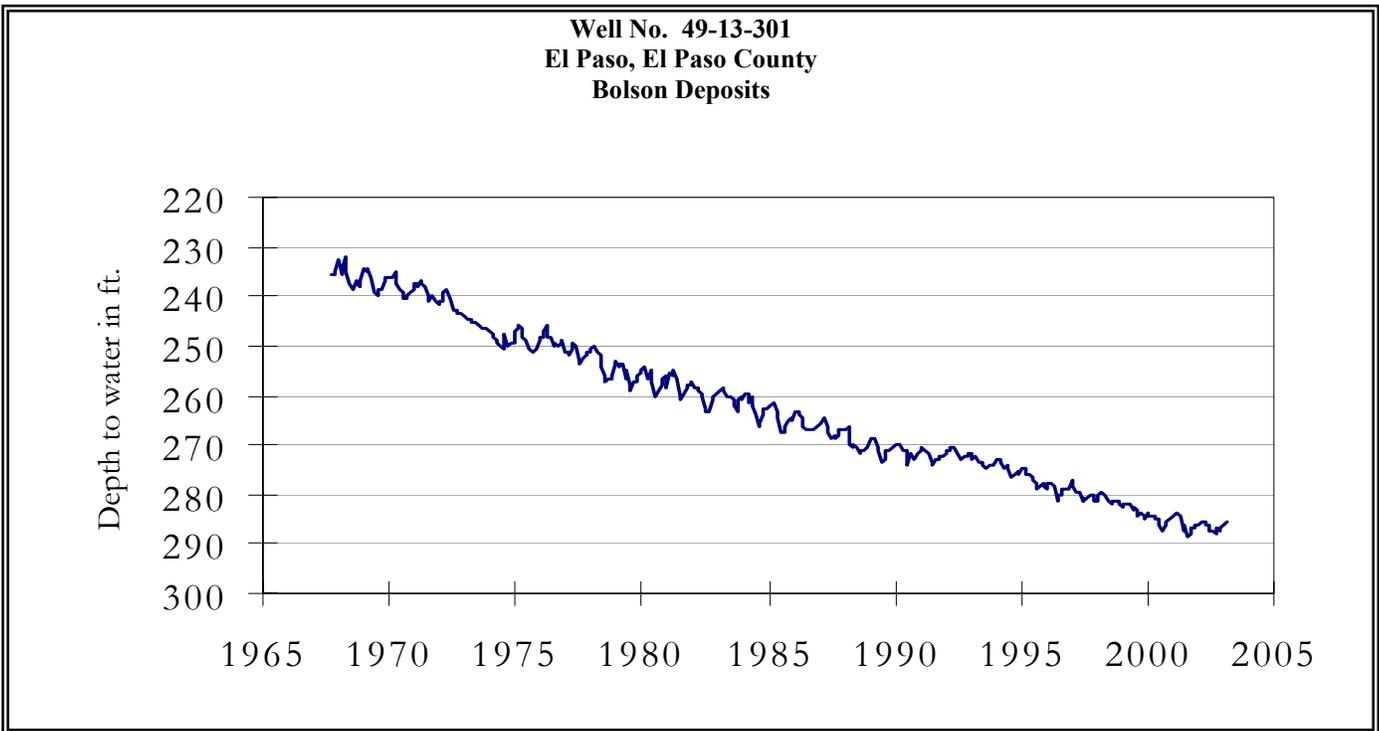
The late February water-level measurement in this Ogallala aquifer well, elevation 3,816 feet above sea level, was 257.65 feet below land surface. This measurement was 0.61 feet above December's measurement, 2.71 feet below last year's measurement, and 101.65 feet below the initial measurement recorded in 1968.



The late February water-level measurement in this Paluxy Formation Trinity aquifer well, elevation 535 feet above sea level, was 440.05 feet below land surface. This measurement was 1.17 feet above last month's measurement, 0.39 feet above last year's measurement, and 46.66 feet below the initial measurement recorded in 1953.

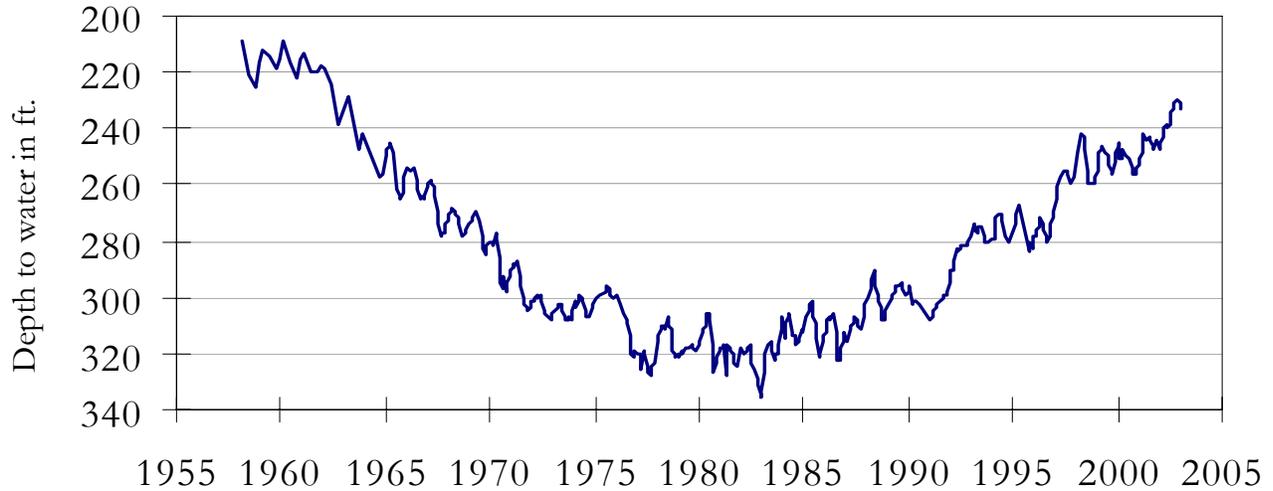


The late February water-level measurement in this Hosston Formation Trinity aquifer well, elevation 823 feet above sea level, was 448.38 feet below land surface. This measurement was 0.16 feet below last month's measurement, 4.38 feet below last year's measurement, and 156.38 feet below the initial measurement recorded in 1955.



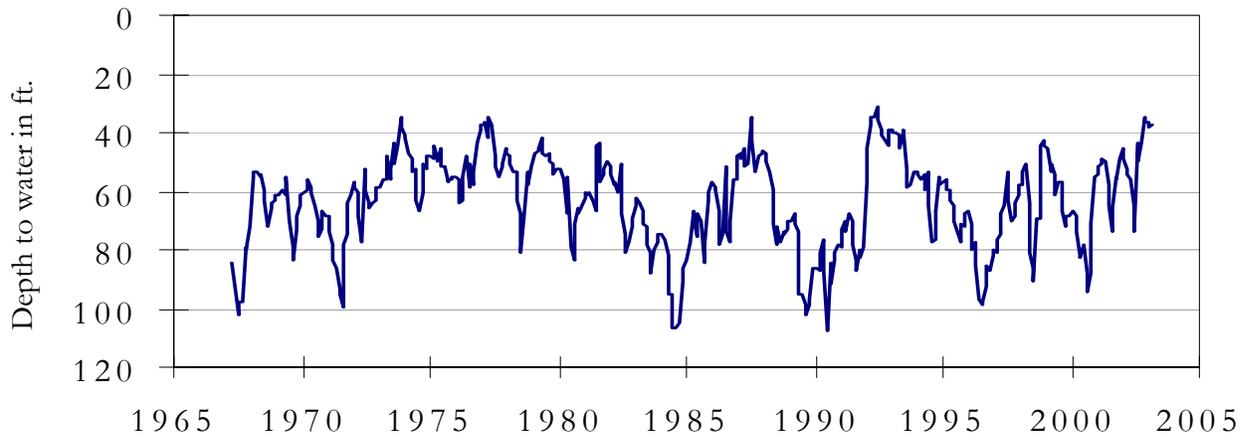
The late February water-level measurement in this Hueco Bolson aquifer well, elevation 3,882 feet above sea level, was 285.83 feet below land surface. This was 0.32 feet below last month's measurement, 0.51 feet below last year's measurement, and 53.93 feet below the initial measurement recorded in 1964.

**Well No. 65-14-409  
Alief, Harris County  
Evangeline**



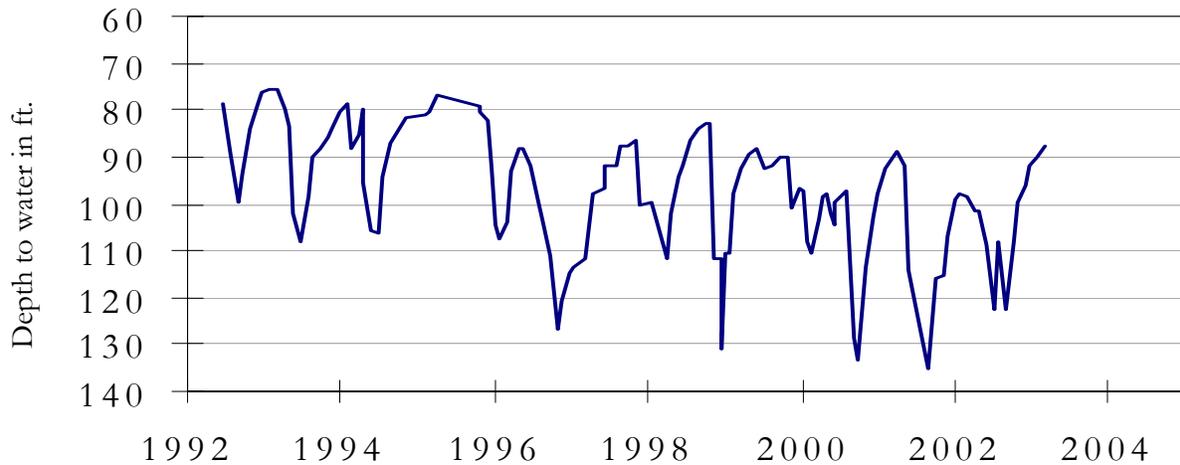
The late February water-level measurement in this Evangeline Formation Gulf Coast aquifer well, elevation 66 feet above sea level, was 233.23 feet below land surface. This was 1.12 feet below last month's measurement, 9.65 feet above last year's measurement, and 130.00 feet below the initial measurement recorded in 1947.

**Well No. 68-37-203 (J-17)  
In San Antonio, Bexar County  
Edwards and Associated Limestones**



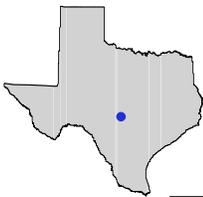
The late February water-level measurement in this Edwards (BFZ) aquifer well, elevation 731 feet above sea level, was 37.53 feet below land surface. This was 0.25 feet above last month's measurement, 14.93 feet above last year's measurement, and 22.09 feet above the initial measurement recorded in 1962.

**Well No. 68-60-912  
Between Poteet and Pleasanton, Atascosa County  
Carrizo**



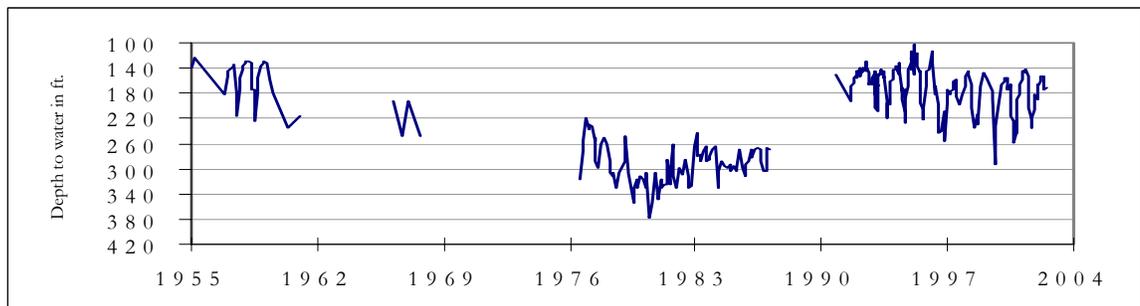
The late February water-level measurement in this Carrizo aquifer well, elevation 446 feet above sea level, was 87.84 feet below land surface. This measurement was 2.38 feet above last month's measurement, 10.51 feet above last year's measurement, and 6.59 feet below the initial measurement recorded in 1965.

***HYDROGRAPH OF THE MONTH***



Each month this space features a new hydrograph (marked with the • symbol on the map) depicting different aquifers and different conditions in Texas.

**Well No. 5663604  
Kerr County**



This 606 ft. deep monitor well within the city limits of Kerrville, at an elevation of 1,653 feet above sea level, was completed in the Hosston (lower Trinity) aquifer. Data gaps exist during the period it was used as a public supply well (until the mid to late eighties). After conversion in the nineties to a monitor well, water levels rebounded; the hydrograph began reflecting seasonal storage and recovery from a nearby ASR (Aquifer Storage & Recovery) well, located 100 ft. away.

*TEXAS WATER DEVELOPMENT BOARD  
1700 N. CONGRESS AVE.  
P.O. BOX 13231  
AUSTIN TX 78711-3231*